FORM 1

COVER SHEET
NEW DEGREE PROGRAM PLANNING NOTIFICATION OF INTENT
(PLANNING NOI)

Program Information

Program Name: ____Geographic Information Systems and Sustainability ___

Institution Name: ___University of Washington_____

Degree Granting Unit: _____Department of Geography_____
(e.g. College of Arts and Science)

Degree: _ Master of GIS and Sustainability _ Level: __Masters__ Type: _Information Technology and Social Science
(e.g. B.S. Chemistry) *(e.g. Bachelor)* *(e.g. Science)*

Major: _Geography_____ CIP Code: _ 45.0799 _
(e.g. Chemistry)

Minor: _____
(if required for major)

Concentration(s):
(if applicable)

Proposed Start Date: Summer 2010

Projected Enrollment (FTE) in Year One: __25_____ At Full Enrollment by Year: _2011__: ___50_____
(# FTE) *(# FTE)*

Proposed New Funding: fee-based with
$305K expenses in Year 1__

Funding Source: State FTE X Self Support Other

Mode of Delivery

Single Campus Delivery _____
(*enter locations)*

Off-site _____University of Washington Extension, Seattle Downtown__
(enter locations)

Distance Learning _____asynchronous and synchronous delivery_____
(enter formats)

Substantive Statement of Need

Attach Sheet

Contact Information (Academic Department Representative)

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_____ July 31, 2009_____
Endorsement by Chief Academic Officer Date

Background Information

A professional Master of Geographic Information Systems (GIS) and Sustainability emphasizes geographic information systems technology while weaving a theme of sustainability information science to address the interaction of social, economic, and environmental problems. GIS is the principal technology within an industry called geospatial technology. The Department of Labor (DOL) Career Voyages website describes the geospatial industry as one which '… acquires, integrates, manages, analyzes, maps, distributes, and uses geographic, temporal and spatial information and knowledge. The industry includes basic and applied research, technology development, education, and applications to address the planning, decision-making, and operational needs of people and organizations of all types'[1]. Geospatial technologies have a wide range of applications across fields as diverse as '…agriculture and soils; archeology; biology; cartography; ecology; environmental sciences; forestry and range; geodesy; geography; geology; hydrology and water resources; land appraisal and real estate; medicine; transportation; urban planning and development, and more'. The DOL Career Voyages web site points to the emergence of geospatial technology as a field in high demand with enormous employment growth 2006-2016, estimating between 18-26% growth in a number of subfields. Geospatial professionals work in all levels of government, as well as both private and non-profit sectors. Many of the jobs being created require advanced degrees because of the need for advanced and specialized skills in information technology.

The University of Washington Department of Geography currently offers theoretical MA and PhD degrees, which are not specifically categorized by type of methods used or intellectual frameworks employed. Many applicants to our program are denied entry to these degree programs as they are specifically interested in applications of GIS technologies, rather than in the broader intellectual and theoretical foundations of geography as a social science. This proposed program intends to serve this mainly non-traditional, working population with a professional degree, which would integrate policy and practice into a curriculum more directly, and which we believe would be highly attractive to a wide audience.

Of the sample of ten programs (Clark University, *Penn State University, University of Edinburgh, University of Minnesota, University of Toronto, University of Calgary, University of Hong Kong, *University of London, Birkbeck College, University of Texas at Dallas, *Utrecht University) that offer a professional master's in GIS degree, the three of them marked with an asterisk offer distance learning delivery. The additional focus on sustainability information makes the UW Program a unique offering online. Sustainability information science emphasizes a systematic study of relationships among social/cultural, economic, and ecological conditions that describe well-being in various regional and urban communities. The relationships commonly have a spatial character about them, hence the GIS foundation for the program. GIS methods are continuing to emerge as the approach of

[1] http://www.careervoyages.gov/geospatialtechnology-main.cfm)

choice when exploring, understanding, and setting priorities for actions addressing complex sustainability problems.

Substantive Statement of Need

The UW Extension GIS certificate program offering routinely fills to capacity, and GIS courses offered in the Geography Department are over-enrolled by undergraduate students every year, with the graduate version of the courses having limited seats available. Over the past five years, Geography received 150+ graduate applications oriented to GIS. Of those, because we focus on theory in the regular program, we could admit at most ten. Many were not qualified, but many more were qualified, leaving a gap of approximately 100 applicants not served. In addition, the theme of 'sustainability' is, and has been, a draw for many programs at UW, and worldwide. The Provost has initiated a "sustainable cities" proposal for 2009-2010, at least in part because of the widespread interest on this topic that has been expressed regionally, nationally, and internationally over the past decade. In recent years employers like NOAA, City of Bellevue, Weston Engineering, Genwest Systems, Inc. have come to geography looking for GIS graduates at the graduate level. However, we cannot fulfill those requests because the graduate program is limited. A professional Master of GIS and Sustainability matches market needs in several ways: by providing the technical skills necessary for advanced computer mapping in multiple disciplines; by linking these skills to concrete problem-solving in one of the foremost conceptual areas of interest around the globe; and by integrating theory and practice in ways that build on and complement undergraduate BA and BS degree programs. The primary target audience for this professional master's program is working professionals (i.e., non-traditional students). A basic qualification for this program is at least one year of related work experience in the private, public, and/or not-for-profit sector; a qualification common for many professional master's programs. Upon completion of this program graduates will be prepared to ask and follow through on appropriately scaled applied research questions, find, code, and manage data of multiple kinds, tackle complex problems with managing, analyzing and displaying geospatial data, negotiate and participate in group deliberations around mapping and analysis, and produce original and creative work related to real-world problems of sustainability worldwide.

Proposed Curriculum

The GIS and Sustainability program is proposed as a nine-course program comprised of six courses that are currently offered in the program, and three that are new courses. The nine courses, each at five credits per course, would amount to a total of 45 credit hours. Six courses (30 credits) would be drawn from existing offerings. Three courses (15 credits) would be new ones (those marked NEW below). The regular curriculum is set up to serve a part-time student body consisting of one course per quarter in "roughly" a sequence, hence the nine quarters in the table that follows. Because this is a masters professional program, most prospective applicants in the audience base (as described in the background section) will likely prefer a part-time pace to the program over nine-consecutive quarters. Two years is an appropriate term for a part-time master's program. The part-time and full-time mix is expected to be a permanent mix of the program.

Part-time option completed in nine consecutive quarters starting in summer 2010

Summer 1: Geog 560: Principles of GIS Mapping
Autumn 1: Geog 562: Coastal GIS
Winter 1: Geog 563: Principles & Practices of Sustainability (NEW)
Spring 1: Geog 565: GIS Database and Programming
Summer 2: Geog 569a: GIS Workshop I
Autumn 2: Geog 564: GIS-Based Decision Support
Winter 2: Geog 568: International Perspectives on Sustainability (NEW)
Spring 2: Geog 576: Case Studies in Sustainability (NEW)
Summer 3: Geog 569b: GIS Workshop II

Of the nine courses in the curriculum, three would be taught as face-to-face (boldface above), each during one week of intensive at the UW Educational Outreach facilities either in downtown Seattle or in Bellevue. Face-to-face instruction will help build a class cohort identity. The remaining six courses would be taught online, relying largely on instructor-led, asynchronous course delivery to accommodate an audience spanning multiple time zones.

Workshop I and Workshop II are intermediate and final capstone courses featuring group projects that address problem scenarios posed by the students based on their work activities. The content and other instructional resources for six of the courses currently exist, while content for the remaining three courses, designated as NEW (below), are to be developed.

Starting in the second year of the program, students will have an option for enrolling full-time, as space is available. In the full-time version, the nine courses (45 credits) would be completed in five quarters because four courses (564, 568, 576, 469b) can be taken at the same time as other intermediate courses in the table that follows. However, workshop I would precede workshop II in all cases.

Full-time option completed in five quarters starting in summer 2011

Summer 1: Geog 560: Principles of GIS Mapping
Autumn 1: Geog 562: Coastal GIS
Geog 564: GIS-Base Decision Support
Winter 1: Geog 563: Principles & Practices of Sustainability (NEW)
Geog 568: International Perspectives on Sustainability (NEW)
Spring 1: Geog 565: GIS Database and Programming
Geog 576: Case Studies in Sustainability (NEW)
Summer 2: Geog 569a: GIS Workshop I
Geog 569b: GIS Workshop II

The program is to be cohort-based, with 25 students per cohort. At full offering, three cohorts would be in progress simultaneously given the timing of the course offerings. Describing the program by cohort year, the first year cohort is expected to be twenty-five students. A second cohort of twenty-five students will start in the second year of the program, and some of these can be full-time, as they can take two courses per quarter on a

space available basis. The program will have fifty students enrolled at any given time, although at full load, the third summer will have seventy–five students.

Funding Model and Degree Program Infrastructure

The program will operate on a fee-based funding model. UW Educational Outreach (UWEO) will enroll students and collect revenue in the form of course fees in this 45-credit graduate program to recover the costs of program operation and delivery. Expenses in year 1 are projected to be $305K for an initial cohort of 25 students. With two overlapping program cohorts in year 2, expenses are estimated to be $575K for 50 students enrolled in the program. The expenses are in line with offering a total of four courses the first year, to offering nine courses in the second and subsequent years.

UWEO will designate a program director and a program coordinator to be the primary liaisons for Department of Geography in the degree program partnership. The UWEO program director interacts with the department chair, faculty, academic staff, and department program director to ensure the program is implemented in a manner that achieves the academic, student services, and fiscal goals of the Department and College. The UWEO program coordinator communicates with degree program students, department coordinators, and program advisors to ensure smooth course logistics and registration.

The UWEO program director and coordinator draw upon centralized program management resources along with UW and UWEO operational units. UWEO's services include:

- Public relations for the program
- Market research, if necessary
- Marketing and promotion
- Dedicated marketing website for program
- Student recruitment
- Student registration and tracking
- Building/coordinating advisory board under Department of Geography's direction
- Troubleshooting operational issues
- Budgeting and pricing, under Geography's guidance
- Facilitating classroom assignments, as necessary
- Supporting online learning course design, delivery, and technical support
- Paying faculty and other program costs
- Financial accounting services for the program
- Delivering online exit surveys annually for each course
- Risk management
- Funding resources during dedicated program development periods